Static Detonation Chamber

The Pueblo Chemical Agent-Destruction Pilot Plant (PCAPP) is safely and efficiently destroying chemical weapons stored at the U.S. Army Pueblo Chemical Depot. Technology known as neutralization followed by biotreatment is used to destroy the majority of mustard agent contained in projectiles. PCAPP will employ three Static Detonation Chamber (SDC) units, each consisting of two units — the detonation chamber and the off-gas treatment system (OTS) — to augment the main plant by destroying all problematic munitions, including the 4.2-inch mortar rounds.

What is the Static Detonation Chamber?

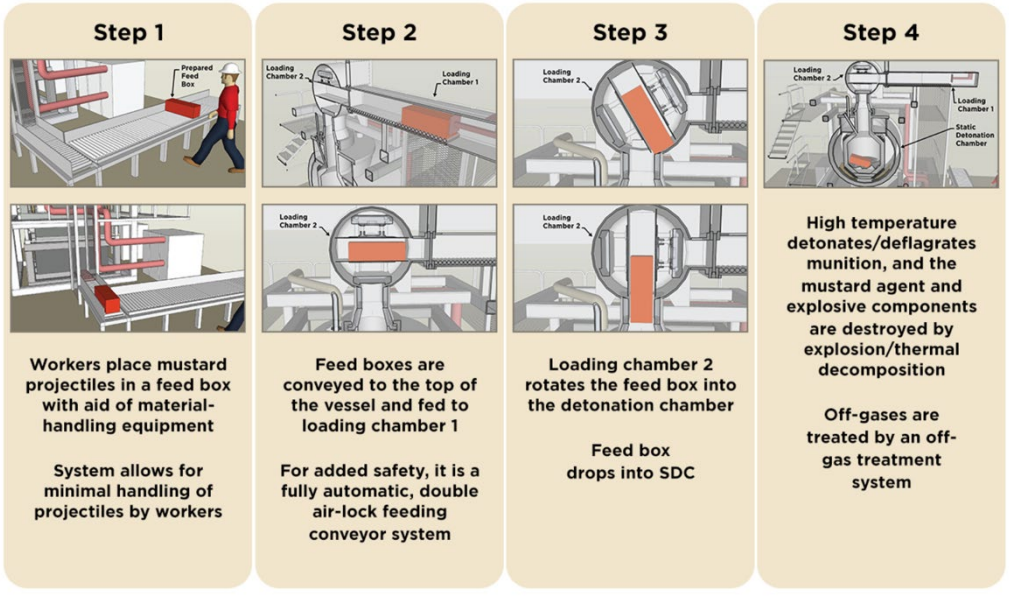
An SDC uses thermal destruction methods to destroy munitions. An SDC is a nearly spherical, armored, high-alloy stainless steel vessel. The heat produced in this electrically heated containment vessel detonates the munition to destroy the agent and munitions components.

How does it work?

Chemical agent-filled munitions are placed in a carrier, conveyed to the top of the SDC vessel and fed into the electrically heated detonation chamber. High temperature (approximately 1,100 degrees Fahrenheit or 600 degrees Celsius) detonates or deflagrates the munition, and the chemical agents are destroyed by thermal decomposition.

Gases generated from the detonation or deflagration are treated by an OTS that includes a thermal oxidizer that converts carbon monoxide and hydrogen to carbon dioxide, water and acid gases (hydrochloric and sulfuric). Gases from the thermal oxidizer are cooled and filtered to remove any contaminants.

The SDC produces minimal liquid waste. Scrap metal removed from the vessel may be recycled. Salts from the OTS are treated and disposed of in accordance with state and federal laws.



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